Application No.: 10/737361 Examiner: C. C. Chang Docket No.: PAZ-178CPCN Art Unit: 1625

## **AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions of the claims and listing of the claims in the application:

## 1.-15. (Cancelled)

16. (Currently Amended) A tetracycline compound of formula (III):

wherein:

J<sup>5</sup> and J<sup>6</sup> are each independently hydrogen, alkyl, alkenyl, alkynyl, aryl, sulfonyl, acyl, alkoxycarbonyl, alkaminocarbonyl, alkaminothiocarbonyl, substituted thiocarbonyl, substituted carbonyl, alkoxythiocarbonyl, or linked to form a ring;

J<sup>7</sup> and J<sup>8</sup> are each alkyl, halogen, or hydrogen;

X is  $CHC(R^{13}Y'Y)$ ,  $CR^{6'}R^{6}$ ,  $C=CR^{6'}R^{6}$ , S,  $NR^{6}$ , or O;

R<sup>2</sup>, R<sup>2</sup>, R<sup>4</sup>, and R<sup>4</sup> are each independently hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

 $R^4$  is  $NR^4$ ' $R^4$ ", alkyl, alkenyl, alkynyl, aryl, hydroxyl, halogen, or hydrogen;  $R^{2^2}$ ,  $R^3$ ,  $R^{10}$ ,  $R^{11}$  and  $R^{12}$  are each hydrogen or a pro-drug moiety;

R<sup>5</sup> is hydroxyl, hydrogen, thiol, alkanoyl, aroyl, alkaroyl, aryl, heteroaromatic, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, alkyl carbonyloxy, or aryl carbonyloxy;

R<sup>6</sup> and R<sup>6</sup> are each independently hydrogen, methylene, absent, hydroxyl, halogen, thiol, alkyl, alkenyl, alkynyl, aryl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, or an arylalkyl;

R<sup>7</sup> is hydrogen, nitro, alkyl, alkenyl, alkynyl, aryl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, arylalkyl, amino, arylalkenyl, arylalkynyl, thionitroso, or -(CH<sub>2</sub>)<sub>0</sub>.

3NR<sup>7c</sup>C(=W')WR<sup>7a</sup>;

Application No.: 10/737361 Examiner: C. C. Chang Docket No.: PAZ-178CPCN Art Unit: 1625

W is CR<sup>7d</sup>R<sup>7e</sup>, S, NR<sup>7b</sup> or O;

W' is O, S, or  $NR^{7f}$ ;

R<sup>7a</sup>, R<sup>7b</sup>, R<sup>7c</sup>, R<sup>7d</sup>, and R<sup>7e</sup> are each independently hydrogen, acyl, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

R<sup>8</sup> is hydrogen, hydroxyl, halogen, thiol, alkyl, alkenyl, alkynyl, aryl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, or an arylalkyl;

R<sup>13</sup> is hydrogen, hydroxy, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, or an arylalkyl; and

Y' and Y are each independently hydrogen, halogen, hydroxyl, cyano, sulfhydryl, amino, alkyl, alkenyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, or an arylalkyl, and pharmaceutically acceptable salts thereof.

- 17. (Original) The tetracycline compound of claim 16, wherein R<sup>4</sup> is NR<sup>4</sup>'R<sup>4</sup>", X is CR<sup>6</sup>R<sup>6</sup>'; R<sup>2</sup>, R<sup>2</sup>, R<sup>6</sup>, R<sup>6</sup>, R<sup>8</sup>, R<sup>10</sup>, R<sup>11</sup>, and R<sup>12</sup> are each hydrogen; R<sup>4</sup> and R<sup>4</sup>" are lower alkyl; and R<sup>5</sup> is hydroxy or hydrogen.
- 18. (Original) The tetracycline compound of claim 17, wherein R<sup>4</sup> and R<sup>4</sup> are each methyl and R<sup>5</sup> is hydrogen.
- 19. (Original) The tetracycline compound of claim 16, wherein  $J^7$  and  $J^8$  are hydrogen.
- 20. (Original) The tetracycline compound of claim 16, wherein J<sup>5</sup> is substituted or unsubstituted alkyl.
- 21. (Original) The tetracycline compound of claim 16, wherein J<sup>5</sup> is sulfonyl.
- 22. (Original) The tetracycline compound of claim 16, wherein J<sup>5</sup> and J<sup>6</sup> are linked to form a ring.
- 23. (Original) The tetracycline compound of claim 16, wherein  $J^5$  is heteroaryl.
- 24. (Original) The tetracycline compound of claim 16, wherein J<sup>5</sup> is substituted carbonyl.

Application No.: 10/737361 Examiner: C. C. Chang Docket No.: PAZ-178CPCN Art Unit: 1625

25. (Currently Amended) The tetracycline compound of claim 16, wherein said compound is selected from the group consisting of:

Examiner: C. C. Chang Art Unit: 1625

wherein

R is substituted or unsubstituted alkyl, alkenyl, alkynyl, halogen, alkoxy; and Y is N, O, or S, or pharmaceutically acceptable salts or prodrugs thereof.

26. (Currently Amended) A tetracycline compound selected from the following: of Table 1,

NH <sub>2</sub> OH OH OH OH	OH O OH O OH NH2	OH OH OH
OH O OHPO OH	F H OH OH OH OH	$\begin{array}{c c} & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & \\ & & & \\ & &$
F OH O OH O OH	NH OH OH OH NH2	N H H H OH NH2
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	CI H H OH OH OH OH OH OH	OH OH OH OH
$\begin{array}{c c} & H & H & N \\ \hline & H & N & OH \\ \hline & OH & OH & OH \\ \hline & OH & OH & OH \\ \hline \end{array}$	F H H OH NH2	F H H H H H H H H H H H H H H H H H H H
HO OH O OH O O	H SH2	H <sub>2</sub> N OH O OH O O
H H H OH O	OH O OH O OH ONH2	$\begin{array}{c c} & & & \\ & & & \\$
HN OH OH OH	OH OH OH NH2	NH2
H H OH NH2	$\begin{array}{c c} H_2N & \begin{array}{c} H & H \\ \hline \\ OH & OH \end{array} \begin{array}{c} OH \\ OH \end{array} \begin{array}{c} OH \\ OH \end{array}$	N N N N N N N N N N N N N N N N N N N
N H H H OH OH OH OH OH OH	OH OHOON	H H H OH NH2

H CH OH	N H H N OH	H H H H H H H H H H H H H H H H H H H
NH <sub>2</sub>	OH OH OH NH2	H H H OH NH2
N H H OH OH OH OH OH OH	F-F OH OH OH OH OH	H H DHO OH OH
H H H H NH2	HO H H H H H OH NH2	OH OH OH
OH OH OH	HO H I I I I I I I I I I I I I I I I I I	OH OHON OH
NH OH NH2	H H N OH NH2	H H H H H NH <sub>2</sub>
$\begin{array}{c c} & & & \\ & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & &$	0 H N H 2 OH N H 2	F H H H H H H NH2
H H H OH NH2	F- OH OH OH OH	OH OHOON
F N N N N N N N N N N N N N N N N N N N	H <sub>2</sub> N OH OH OH OH OH	F H H H OH NH2

Application No.: 10/737361

Examiner: C. C. Chang Docket No.: PAZ-178CPCN Art Unit: 1625

or a pharmaceutically acceptable salt thereof.

- (Currently Amended) A pharmaceutical composition comprising an effective amount of a 27. tetracycline compound of any one of claims 1, 15, 16, 25 or 26, and a pharmaceutically acceptable carrier.
- The pharmaceutical composition of claim 27, wherein said effective amount 28. (Original) is effective to treat a tetracycline responsive state.
- 29.-41. (Cancelled)
- (New) The compound of claim 16, wherein R<sup>7</sup> is dialkylamino. 42.
- (New) The compound of claim 42, wherein R<sup>7</sup> is dimethylamino. 43.
- (New) The compound of claim 16 or 24, wherein J<sup>6</sup> is alkyl. 44.

Application No.: 10/737361 Examiner: C. C. Chang Docket No.: PAZ-178CPCN Art Unit: 1625

## 45. (New) The compound of claim 44, wherein said compound is